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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,958	02/16/2001	Seong-Min Kim	P64425US2	2946

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EXAMINER

NGUYEN, HA T

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 02/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/783,958

Applicant(s)

KIM ET AL.

Examiner

Ha T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-54 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 33-54 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 33-54 are objected to because of the following informalities: in claim 33, lines 4 and 5, substitution of "polymer at least one" with -- at least one polymer -- is suggested; the use of "such as" in lines 2, 3 of claim 36, lines 2, 3 of claim 40, and lines 3, 4 of claim 43 is improper, substitution of "such as" with --including-- is suggested for clarity. Appropriate correction is required.

Claims 34-54 variously depend from claim 33, they are objected to for the same reason.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371⁶ of this title before the invention thereof by the applicant for patent.

3. Claims 33, 35, 36, 39, 40, 42, and 43 are rejected under 35 U.S.C. 102(e) as being anticipated by Amano et al. (U. S. Patent 6235433, hereinafter "Amano").

[Claim 33] Referring to Fig. 1 and related text, Amano discloses a method for manufacturing an electric energy storage device comprising the forming an ionic conducting polymer electrolyte separator. comprising : i) preparing common solvent for an electrolyte and for dissolving polymer and ii) dissolving at least one polymer selected from the group consisting of polymer of polyacrylate series, polyvinylidene fluoride, copolymer of polyvinylidene fluoride and polymer of polyether series in said common solvent (see col. 4, line 34-col. 5, line 12, col. 9, lines 23-36, example 1, col. 13, and lines 48-59).

[Claims 35, 36, 39, 40, 42, and 43] wherein said common solvent is composed of propylene carbonate; wherein said common solvent comprises alkylammonium compounds including tetraethyl- ammoniumtetrafluoroborate or amide compounds including tertiary amide;

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wherein said common solvent is composed of butyrolactone; wherein said common solvent is composed of propylene carbonate and gamma-butyrolactone (see col. 9, lines 47-60).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103[©] and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amano.

[Claim 34] Amano discloses substantially the limitations of claim 34 as shown above. But it does not disclose expressly wherein the step of forming said separator further comprises steps of heating a mixture of said common solvent and said polymer and coating said mixture on a current collector.

However, this would have been obvious for a person of ordinary skill in the art to do so when the process of making electrolyte separator is included in the process of making capacitor.

A person of ordinary skill is motivated to modify Amano to include the electrolyte separator making step in the capacitor making process to reduce the number of process steps required. The heating is needed to reduce the viscosity of the mixture for an easier coating.

Therefore, it would have been obvious to use Amano's teaching to obtain the invention as specified in claim 34.

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6. Claims 37, 41, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amano in view of Chu (U.S. Patent 5789108).

Amano discloses substantially the limitations of claims 37, 41, and 44, as shown above.

But it does not disclose expressly wherein the step of dissolving said polymer is performed by homogeneously dispersing polyacrylonitrile and polyvinylidene fluoride in said common solvent.

However, the missing limitations are well known in the art because Chu discloses that polyacrylonitrile and polyvinylidene fluoride are conventional materials used in gel electrolyte (See col. 6, lines 10-14).

It is within the level of ordinary skill in the art to use conventional materials to perform the same function.

Therefore, it would have been obvious to combine Amano with Chu to obtain the invention as specified in claims 37, 41, and 44.

7. Claims 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Amano in view of Skotheim (U.S. Patent 5690702, hereinafter "Skotheim").

Amano discloses substantially the limitations of claim 38, as shown above.

But it does not disclose expressly wherein the step of dissolving said polymer is performed by homogeneously dispersing polyacrylonitrile and polymethylmethacrylate in said common solvent.

However, the missing limitations are well known in the art because Skotheim et al. discloses that polyacrylonitrile and polyvinylidene fluoride are conventional materials used in gel electrolyte (See col. 5, lines 37-48).

It is within the level of ordinary skill in the art to use conventional materials to perform the same function.

Therefore, it would have been obvious to combine Amano with Skotheim to obtain the invention as specified in claim 38.

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8. Claims 45-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amano in view of West (U.S. Patent 4010405).

• [Claim 45] Amano discloses substantially the limitations of claim 45, as shown above. It also discloses forming said -separator on a first electrode (see col. 13, lines 48-59). But it does not disclose expressly winding said first electrode with a second electrode. However, the missing limitation is well known in the art because West discloses the forming of a wound capacitor (See the fig.). A person of ordinary skill is motivated to modify Amano with West to obtain high capacitance capacitor of small size

[Claim 46] Amano also disclose expressly directly coating said separator on said first electrode (see Fig. 1);

[Claim 47] wherein said first electrode is a cathode having an activated carbon coated thereon (see col. 10, lines 19-29).

[Claims 48 and 49] Amano does not disclose injecting additional electrolyte in said first and second electrodes. However it would have been obvious for a person of ordinary skill in the art to add the identical electrolyte to the electrodes when the capacitor container does not have enough electrolyte to have capacitance in the required range.

[Claim 50] West discloses wherein said first electrode is wider than said second electrode and the size of the first electrode can be modified to fit the design of a specific application (see col. 2, lines 48-60).

[Claims 51-54] The combined teaching does not disclose the details about the winding of the electrodes and the used of an insulating tape or paper at the end of the first electrode. However, it is within the level of skill of an ordinary artisan to do so because the isolation of the two electrodes is required for the proper functioning of the capacitor, isolating a potential contact point of the two electrodes using a conventional means like a tape or paper would have been obvious.

Therefore, it would have been obvious to combine Amano with West to obtain the invention as specified in claims 45-54.

Conclusion

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ha Nguyen whose telephone number is (703)308-2706 . The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM, except the first Friday of each bi-week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling, can be reached on (703) 308-3325. The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Ha Nguyen

Primary Examiner

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